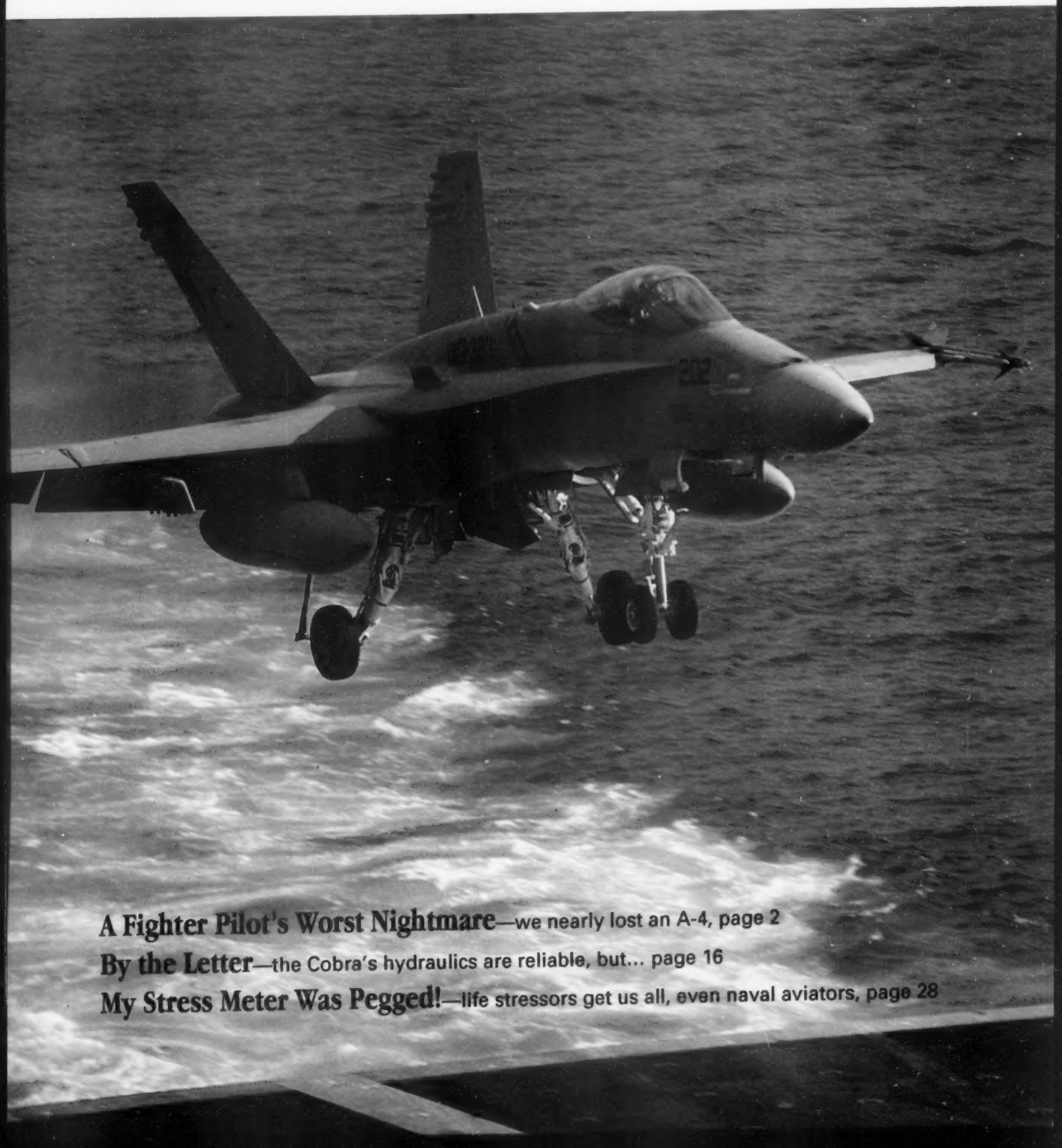
June 1994

approach



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Sound Judgment? or Basic Knowledge?

NATOPS has been a cornerstone of naval aviation since 1961. At that time, the aviation Class A mishap rate was 17.17. Today, the rate is 1.41. Since its inception, NATOPS has grown to include not only the occasionally daunting tomes affectionately called "big blue sleeping pills," but also smaller pocket-sized emergency checklists, and other manuals governing every phase of flight operations ashore and afloat.

Every aircraft operated by the Navy, Marine Corps, and Coast Guard—as well as every submodel—generates its own specific NATOPS. During a 20-year career, a naval aviator will digest the contents of at least half a dozen of these huge manuals.

NATOPS rules naval aviation. Daily operations and mission considerations emanate from just how well every individual aviator and crewman knows his NATOPS. Careers have been lost, as well as lives and aircraft, because someone didn't know, or forgot NATOPS right when he needed it most.

Yet, with all the weight that NATOPS carries, it provides a loophole through which many people think they can easily slip after a mishap. At first, it said:

> (NATOPS) is not planned to stifle individual initiative, but rather to aid the commanding officer in increasing his unit's combat potential without reducing his command prestige or responsibility... to remain effective, NATOPS must be dynamic and stimulate rather than suppress individual thinking... *(A-1H/J NATOPS,* 1966*)*

A few years later the wording in the "Scope" section read:

> (NATOPS) is not a substitute for sound judgment. Compound emergencies, available facilities (and other considerations) may require modifications of the procedures contained (in this manual)... *(ATAF, AF, RF, TF-9J NATOPS,* 1971*)*

The wording was next changed to read:

> Standardization, based on professional knowledge and experience, provides the basis for development of an efficient and sound operational procedure. This standardization program is not planned to stifle individual initiative...*(RF-8G NATOPS,* 1979*)*

Today's version says:

> (NATOPS) is not a substitute for sound judgment. Failure to apply knowledge of aircraft systems to prevent or minimize injury or damage... is as serious... as failure to (use) NATOPS when appropriate...*(SH-60B NATOPS,* 1990*)*

We recently touched off a small firestorm of controversy when an analyst castigated (in some readers' minds) an author who ignored explicit NATOPS instruction, kept a faltering engine going—instead of recovering single-engine—and survived. As the backup for his actions, the pilot deftly quoted the catchall paragraph in NATOPS that allows (but certainly does not *advise*) deviation from the rules in the name of sound judgment.

Discussion is good for the collective soul, especially for a group as vocal and experienced as those of us in naval aviation. We're glad when we see a little healthy discussion, pro and con. It gets people thinking in the ready rooms and the cockpits. But when the situation is happening right now, and you don't have too much time to think, can you afford to simply fall back on what some people consider a crutch, mainly this paragraph in NATOPS? The sidebar on page 9, "From the Safety Officer," got us to thinking: is this paragraph in NATOPS too lenient, has it outlived its usefulness, or do too many people not fully comprehend its intent? Are we using this paragraph as a reason—even a crutch—for *not* learning or adhering to NATOPS?

We'd be interested in your thoughts.

Peter Mersky
Acting Editor

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Peter Mersky

A Fighter Pilot's Worst Nightmare

By LCdr. Donald T. Brady

We were at NAS Fallon, our Annual Training for the year, a chance to prove once again that the Reserves were able to integrate with the fleet at a moment's notice. We used the same syllabus as the fleet but over a shorter period. Our air-wing detachment lasted only two weeks instead of their three.

Today was the first day of the "big war." After a successful FAST and OAST, I wanted to continue putting my best flight forward through complete briefings, flawless execution of my mission, and debriefing.

I was the flight lead of a section of Tomcats on a designated CAS mission in support of troops at the FEBA. Dedicating a pair of Tomcats to CAS certainly did not seem normal during the brief, but as we all know, strafing is a part of the F-14 weapons package. In fact, Tomcats did strafe targets of opportunity during Desert Storm.

Brief, maintenance checkout, man-up and taxi all proceeded well. We headed to the arming area for the release of the clearing sector holdback to mechanically arm the M-61 Vulcan cannon. I gave a thumbs-up to the ordnanceman signifying all was safed. Both Tomcats carried a CATM-9, TACTS pod, and 20mm TP. In the relatively calm environment of the arming process, I asked myself one last time, "On this training mission, can I select Master Arm-on and pull the trigger? Has anything changed from the brief?"

If I was carrying a TACTS pod and a blue tube for a sortie on the ACMR, the answer would be "Yes." If I was arming a Sparrow for a missile shoot, the answer would be "Yes." If I was arming a captive-carry Phoenix, the answer would be "Absolutely no. Let the RIO launch it!" If I was arming the gun to strafe or to shoot at a banner, the answer would be "Yes."

The key element is that there was an unannounced mission change en route that required me to go back and ask these questions again about arming and pulling the trigger.

We had a specific profile to fly to the battle area and could see interceptors at any time. My wingman was in defensive spread, my six was clear. "Good lookout, keep track of the TID repeat, good lookout," I reminded myself.

My blood pressure starts to elevate ever so slightly, anticipating the complexity of the CAS mission. We approach station and set up a CAP waiting our clearance to the FEBA. Each time we turn west, we pick up some extraneous radar tracks that never develop into anything. We hear chatter on the war net, letting us know bandits are in the area. The pressure begins to rise a bit more; mission success is everything. After asking the controller about our CAS mission, he urgently cuts me off. (Here is our unannounced mission change.) There is a bogey pushing into our air defenses to test our posture and depth.

Remember those questions I asked myself about pulling the trigger on the CAS mission? Do they still

apply? If you were in my position, would you be so busy with mission tasking that you would even get the time to rethink those questions about master-arm-trigger-squeeze?

Thump, thump, thump, the intensity and blood pressure rise. Remember that performances can be measured as a function of pressure; the higher the pressure, the higher the performance... to a point.

Now we set up a counter-rotating CAP to constantly scan the threat area for bandits. Chatter picks up, and now the controller has some information for us.

"Hunter 01, snap 270, single bogey, 18 miles, medium!"

Damn! Our scope was clean, wingman's not in position, and the bogey was close. This was not the most desirable position to be in to execute my new mission! Things are going to happen real fast, real soon. Thump, thump, thump! Dash 2 was five miles in trail, trying to get in position. I should turn away and help rejoin in defensive spread, but I don't want to take my nose off the threat area and further detract from my SA.

"Hunter 01, single bogey, 270, 12 miles, medium!"

The pressure builds. My wingman gets contact, but now I find myself directly between a shooter and the bogey. I begin a lookout both behind for my wingman and in front to watch for possible smoke that would give away the bogey's position.

"Hunter 01, kill, 270, eight miles!"

That's a surprise! Clear, concise, direct, authoritative, early clearance to fire, but I'm between the two aircraft. I select master arm-on.

"Contact!" shouts my RIO.

Fantastic! My trusty RIO has a lock. Seconds seem like minutes. Check closure, double check the master arm-on, ACM guard-up for added missile performance. Diamond is free, Sparrow selected, flashing HUD... trigger squeeze. The tone over the UHF confirms the missile away and no need to squeeze again just yet. Throttle back for IRCM, switch to Sidewinder. Bogey in sight, flashing HUD, good tone, last second SEAM lock, squeeze again! Merge. It was an A-4 with a centerline fuel tank passing right at the edge of the 500-foot bubble, simulating an Archer threat.

The bogey was from our home field, flying support for our det. At the merge, he did not aileron-roll through, signifying either an ignored kill or shots not passed by the Orange controller. He was also aggressively maneuvering his Skyhawk post-merge.

Pressure was building. I have got to kill this bogey or the forces are in for a rough day. I started maneuvering at the merge with a heavy aircraft. Tanks were just emptying. If I want to get this A-4, it will have to be quick.

As we both maneuver, I see a gun attack developing, but it will be a high-angle off, slashing attack, probably followed by an overshoot. I better be on target.

As I close, I select gun. The A-4 stops its hard maneuvering, probably heavy with fuel, but something just was not right. I close to a sweeter-than-anticipated gun solution and now possibly a semi-tracking attack. Something still tugs at my brain stem, needing resolution before I pull the trigger, finally, the gun solution that will put the bogey on video tape, confirming a kill.

"Wait!" my brain screams.

It is the gun! It is armed and extremely lethal. I am about to pull the trigger on a U.S. Navy A-4! At best, I could spray 20mm across the TACTS gold and silver; at worst, the Navy is out an A-4 and a pilot. The prospects of either will have an extremely negative impact on my future participation in the Navy Reserves and my reputation as a safe, competent, aggressive fighter pilot.

I'm getting out of this fight and fast. I didn't know that the A-4 was honoring my wingman's nose for his AIM-9 shot and was using IRCM, the reason for his arching turn and my sweetening gun solution.

How could this happen to me? My original mission was clear. I made a mental note of being able to arm up and pull the trigger on the mission that was briefed. That brief did not include an airborne target on my quick mission change. During the intercept, when I switched to offensive counter-air, I reverted back to using all weapons available to me for the air-to-air tasking.

I always use the gun during training runs back in our working area for high-angle off, slashing gun attacks at close range to include forward-quarter solutions. I practice specifically for these on-snapshot drills, training for a Cat IV bogey with a superior turn rate in a one-circle fight, which might be my only shot. But the gun attack on that mission would have had disastrous results.

In retrospect, it was OK to pull the trigger on an armed gun for CAS at the strafing target. And yes, it was OK to pull the trigger for flyoff tones and for missile assessment during the debrief in TACTS. But it was *not* OK to pull the trigger on the gun during my simulated combat air-to-air engagement.

By the way, sometimes I wonder what my wingman did? Did he arm up for his missile shots? Did he have a guns solution developing? ◄

LCdr. Brady flies with VF-201.

In his cover letter to this story, the author wrote, "After almost two years since my 'incident,' I feel I can discuss it... I firmly believe that you can learn from other people's mistakes, and my mistake in particular." We certainly agree, and appreciate LCdr. Brady's dedication and candor in writing this account of what could have been every fighter pilot's worst nightmare.—Ed.

Teamwork in the Hummer

By Lt. Eric Kukanich

Lt. Corrine Kelley

After three hours of clearing other aircraft into the Kuwait Theater of Operations (KTO) for familiarization flights, I was finally going to get a chance to open my hatch and stare at the E-2's engine nacelle until we trapped. It had been a good flight; it had to be with an all-JO crew. The CICO was the senior member of the crew, a second-tour lieutenant. Our CAPC and copilot were jaygees. We had briefed four hours earlier, covering weather, mission data, SAR, and EPs. As usual, we said that if a flight emergency occurred, the NFOs would pull out their PCLs and back up the copilot with the checklist. Only the CICO and the CAPC would communicate with CIC. The NFOs would also help with radios and provide any other assistance as required.

As we approached the overhead pattern, I saw a long streak of hydraulic fluid on the engine nacelle. At almost the same instant, the pilot reported the flight-hydraulic gauge was reading low, almost zero, but there was no associated master-caution light. I immediately told the CICO about the fluid on the nacelle and he relayed that to the pilots. All of us began pulling out our checklists and the pilots carried out the steps for hydraulic-system failure.

The CICO and pilot decided to call for a squadron rep on Marshal and sent me forward to check the hydraulic reservoir. I made the short trip into the forward-equipment compartment and saw that the reservoir indicator was registering empty. As I reconnected my ICS, I heard the CICO calling for a rep and the pilots discussing the idea of a straight-in approach to the boat.

The CICO told me to tell the pilot what I had found. I selected both pilots on the ICS and explained what I saw as I strapped in again. We had lost one of two systems, and weren't looking forward to a recovery with only one hydraulic system. The copilot radioed our problem to the Air Boss and received clearance for a straight-in approach.

As we began our descent out of altitude, I glanced out the window in time to see a large amount of red fluid surge out of the closed gear doors. It had probably been pooling in the bottom of the doors. My attempt to alert the CICO was tersely answered by the pilot, who asked what was the matter.

Scanning down at my ICS panel, I saw that I still had the pilots selected. I quickly explained what I saw and deselected them. By this time, our rep was on the radio and talking to the CICO, as our pilots began the checklists. It was then I realized I was hearing only half of the checklist conversation and saw that the copilot had deselected my station.

I told the CICO and he had the copilot reselect me. Finally, after a few anxious minutes, we were on the ball.

We recovered with no problems, taxied clear of the wires and shut down normally.

The maintenance inspection revealed a broken line leading into the secondary hydraulic pump on the starboard engine, which resulted in a complete loss of pressure to the flight-hydraulic system. They also discovered a broken wire to the sensor, which activates the warning light on the master caution panel.

In the Hawkeye community, crew coordination is a way of life. For the most part, we reacted as we had briefed. The CICO admitted to being slow to pull out his PCL, leaving it up to the ACO and RO to follow the pilots through the checklist.

Inter-cockpit communication takes on real meaning in the E-2. The combination of five crew members on ICS and six radios can cause a helmet fire in the most benign situation. Generally, only the CICO and CAPC communicate between the front and back ends of the airplane. The ACO and RO back up comms on their respective radios and the copilot usually talks to the Boss. My mistake of having the pilots selected on ICS had led to the copilot deselecting my station.

Finally, our teamwork paid off. Since the pilots had no secondary indications, the check by the crew in the back allowed visual confirmation of the problem both with the nacelle and the hydraulic reservoir. Also, the CICO handled comms with our rep, freeing the pilots to communicate our problems to the LSOs and to do their checklists.

Losing a hydraulic system and the uncertain possibility of further complications always raises the pucker factor. Recovery was sweet, and we were glad to not have to go around again. We gave the pilot an "aircrew OK underlined" for that alone. ◀

Lt. Kukanich flew with VAW-121. He is now an instructor with VAW-120.

Bird on a Wire

By Lt. Winslow Buxton

"You've got a what?
But you can't. We just went IMC."

I'll always remember the ATACO's words immediately after telling him that we had a hung MAD in the full-trail position.

Our detachment was in the last month of a standard Gulf deployment on an FFG-7-class ship. All that remained before our triumphant return home was a transit through the Suez Canal into the Mediterranean for one final multinational ASW exercise. After five months of Middle East Force (MEF) operations, a little ASW was a welcome change.

The morning held a fairly light schedule for both the air det and the ship as most thoughts were focused on preparation for the exercise beginning the next day. We were launching to complete a "C" profile FCF for a recently changed pitch-trim servo. Ground checks were good and the subsequent flight proved no different. After we completed the FCF, we decided to finish our three-hour bag with a little SSC for the ship and an ASW systems check for the helo.

Although the weather was clear when we launched, a scud layer was forming at about 500 feet AGL. A quick check with the seaman-recruit weather-guesser on the ship revealed a 10-knot true wind and a dew point-temperature spread of nine degrees.

"No sweat," I figured, "No fog… just a little hazy."

After flying in the Gulf, I was used to that and after all, it was normal for the Med, right?

Like the earlier FCF, the mission system checks were going smoothly. The sonobouy launcher, OTPI and the magical acoustic processor were working as advertised. The only things left to do was to stream the MAD, fly over a large ferrous object, and observe the signature trace.

The MAD lowered, large ferrous objects were numerous, and the trace was picture perfect. All systems 4.0, right? Wrong. "Sir, The MAD's not coming up."

Did I hear that right? A quick check of the master-caution panel told me I had. Summoning the wisdom of my nearly 2,000 hours, I said, "Try it again."

"I did, sir," the crewman replied. "It's still not coming up."

OK, time to assess our options.

Our briefed bingo field was on a tourist-laden Spanish island approximately 60 miles away. Attractive, but with homeplate 15 miles away, we decided that our OIC might want us to try a shipboard recovery first. With slightly more than two hours of fuel remaining, we felt a shipboard recovery of a fully trailed MAD in day VMC would not be too hard, and we had the time to fully brief everyone concerned.

With that in mind, it was time to tell the ATACO. His response, as you read at the beginning, is not the one I had expected.

While we were busy checking out our mission systems, the ship's lookouts began experiencing sudden acute myopia. In other words, homeplate entered a rapidly forming fog bank just as we told the ATACO about our hung MAD.

A quick recheck with the weather guesser indicated that the wind was indeed calm and the temperature-dew point spread was two degrees, scientific proof that the fast-forming fog was real.

OK, time to reassess our options. Obviously, the problem now was more than just a hung MAD. In my conversations with fellow aviators at the local O Club, I have learned that emergency situations are often resolved as "worst case solutions" and work up from there. My "worst case solution" was to jettison the MAD, then proceed to our bingo field where I would use my one year of Spanish to acquire fuel and return to the ship when it could clear the fog.

My "best case solution" was to find a VMC "hole" for the ship to buster to before I reached bingo fuel.

Accurately locating the ship's position was no problem at all. TACAN was working as it should, and there was always that "picture perfect" MAD trace. We located what we thought to be a suitable (and hoped would be stable) hole about 17 miles away. It would take the ship about 40 minutes to get there, which would leave approximately 20 minutes to recover before we had to jettison the MAD and head toward my first Spanish exam since high school.

As the ship sprinted toward the rapidly diminishing VMC oasis, we briefed in great detail with the LSO, flight-deck crew, and the ship's OOD. Following NATOPS, we asked the ship to provide a minimum of 25 knots of wind across the deck. The sea was calm, so we didn't have to worry about pitch and roll.

In the cockpit, we discussed single-engine failure in a high hover, as well as situations involving the loss of tail-rotor control. We orbited our patch of VMC and continued to vector the ship toward us. Right on schedule at bingo plus 20 minutes, we saw the bow of the ship breaking out into the open. Now came the tricky part.

Initially, we decided to try to slowly lower the MAD bird onto a soft cushion on the flight deck. We quickly abandoned this procedure when it became obvious that only an extremely lucky pilot could gracefully lower a swinging MAD bird on 180 feet of cable onto a standard berthing mattress. Since we were in this situation already, we obviously weren't in that category.

Also, in a 220-foot hover over the flight deck of an FFG-7, the only visual reference the pilot has is the top of the mast and the extreme bow of the ship, which makes exact placement of the MAD difficult at best. I felt fortunate not to send it smashing into the LSO shack.

With the calm voice of the aircrewman as my primary source of information, we gently lowered the MAD bird onto the flight deck into the eager and grounded arms of our det CPO and LPO. They disconnected the bird from the cable and quickly stowed it inside the hangar.

As we slowly lowered our hover, the crewman continued to call the helicopter's position and the cable's status, the goal being to keep the cable taut way down to our clear-deck landing. We had briefed that at the first sign of the cable getting away from the ground crew or coming up toward the rotor arc, we would cut it immediately. We landed just reaching bingo fuel.

We included the ship's personnel in our debrief.

First, we had the luxury of two hours of fuel and a fairly close bingo field that gave us plenty of time to resolve this problem and brief our solution. The extra time we enjoyed may not be available again. Although we had quickly discussed a hung MAD in our standard brief, the subject should have greater emphasis when the mission includes lowering the MAD.

Secondly, after seeing the restricted visibility the pilot has on an FFG-7 flight deck from a 220-foot hover during the day, I would not even attempt the same feat at night. It is far easier to explain to the supply officer why you jettisoned the MAD bird and cable than to explain to a mishap board why you didn't.

Finally, always know the weather at your primary landing point. If I had thought to recheck the weather more often than I did when I initially saw the scud layer forming, I could have prevented this incident. ◀

Lt. Buxton flew with HSL-48's Det 5, and is currently assigned to the Naval Post Graduate School in Monterey.

PH1 Thomas N. Hensley

"507 Requests an *Emergency* Pull Forward!"

By Lt. Andrew J. Mueller
and Lt. Derek Murphy

On the second day of extended operations onboard the USS *Carl Vinson*, we awoke for a 0400 brief. The mission was close air support with a night cat shot and a pinky recovery.

The trip to the roof revealed a full moon and a clear sky. We smiled at each other. "Practically a day cat shot," was the unspoken communication. So far, justification for our early morning roll out of the rack seemed to be forthcoming. Preflight and man-up were normal. However, our hopes for a moonlit night soon disappeared as the moon settled below the horizon.

With all checks complete, we taxied into the shuttle on cat 4. The J-52s roared as we completed the wipeout and one final check of all the instruments. Satisfied all was ready, the lights came on and we braced for the shot.

The stroke was solid, the endspeed good, nose-up

attitude set with a positive rate of climb. We raised the gear. Climbing away from the cold, dark Pacific Ocean, everything seemed normal, even placid. As we passed 400 feet, our sanctuary was immediately shattered by the bright red glow of the RT ENG TEMP light.

We immediately started NATOPS procedures for ENG FIRE/TEMP/FAILURE-TAKEOFF CONTINUED. Already at MRT with the gear raised, we elected not to jettison our stores. We secured the gangbar (thereby shutting off all bleed air), and we both scanned the engine instruments for secondary indications of fire. Our engines did not show any abnormal indications and never even so much as burped through the climb.

At 3,000 feet, we retarded the starboard-engine's throttle to idle and the temperature light went out. Our wingman had joined us and reported no secondaries, so we decided to keep the starboard engine at idle and use it for the recovery.

As we dumped fuel to single-engine landing weight, it became alarmingly apparent that the centerline drop tank was not transferring. Suddenly, our 4.3 max-trap weight (just above bingo fuel) became 2.1 max-trap weight (just above barricade fuel) without jettisoning the store. Our squadron representative in air ops advised us to shut the starboard engine down and divert immediately.

As the engine wound down, we were further alarmed by sudden, violent vibrations. We pressed on to our divert, and we were glad to find the vibrations subsiding, although much too slowly for our comfort.

Finally, with that scare apparently behind us, we prepared for a single-engine, short-field arrestment. We landed without any further problems. The gentle tug of the short-field gear reassured us that our nightmare was finally coming to an end.

On postflight inspection, we were surprised (and frightened) to discover a large exit hole ripped open on the aft end of the starboard-engine bay door. We could see the destroyed turbine section, and several turbine blade tips lay in the cavities of the engine-bay door. Extensive heat damage was evident on the outside of the doors as well as the starboard wing root.

The disintegrating turbine had sliced hydraulic lines, bleed-air lines and ruptured the centerline drop tank. Hydraulic fluid was everywhere. Fortunately, the main fuel cell and supporting lines were untouched, although the area surrounding them had suffered severe damage.

We were extremely fortunate to have landed with a relatively intact aircraft, considering the nature and extent of the damage. Had the fuel cell or fuel lines been ripped open, a catastrophic inflight fire or explosion could have easily resulted. ◀

Lt. Mueller (pilot) and Lt. Murphy (BN) fly with VA-196.

From the Safety Officer

By LCdr. Brad Leppla

This aircrew handled a particularly difficult emergency situation well. They are extremely fortunate to have saved the aircraft and their own lives. But beyond this achievement lies another issue: **NATOPS cannot cover every contingency an aircrew may face.** One contingency not addressed in NATOPS but certainly brought out in this mishap is what to do if the ENG FIRE/TEMP light extinguishes while the crew performs NATOPS procedures. Does this mean the fire-overtemp condition is removed and no longer a threat? That is the implication in this mishap.

As the crew looked for secondary indications of fire, the extinguishing of the light reinforced their decision to keep the motor running to improve their waveoff capability. If they had secured the engine and secondary indications were evident, the NATOPS boldface procedure calls for an ejection. But if the light goes out and the engine still runs, does the presence of secondaries indicate that the engine should be secured, or should the crew eject?

How much additional damage was done to the engine by delaying the decision to shut it down? I don't think that NATOPS intends this much guesswork to be applied. NATOPS does allow some flexibility through its disclaimer that **"...NATOPS procedures should not replace the use of good judgment."** But boldface procedures are boldface because they have come from hard-won experience. We train ourselves to honor warning lights, even though they may be only sensor-element malfunctions. Similar distractors should not divert the aircrew from full compliance with NATOPS boldface procedures.

HIGH WIRE ACT

By LCdr. Mark Scherberger

Determining the nature of an emergency in a timely manner can often mean the difference between a later discussion over a beer or a bier. Emergencies manifest themselves with varying degrees of subtlety. Pronounced left yaw with a distinctive decrease in noise level, or an accompanying fire-warning light, and the simultaneous drop of all performance gauges except engine temperature to zero are as subtle as a train wreck. There is no doubt in our military minds what has occurred and which emergency procedure to do.

Sometimes, however, the indications are not always so straightforward, or kind enough to provide us with foolproof clues.

On a night instrument-ASW MAD flight, I was flying with one of my detachment's H2Ps out of NAS Norfolk. He had just returned from a six-week cruise; both of us had been in the squadron just shy of three months. All of my flying had been on the West Coast, so I was not intimately familiar with the local flying area—especially in the dark.

We completed our BI maneuvers and TACAN approaches at a civilian field west of homeplate and were discussing ways to get a few MAD runs in before RTB. Our radar was down, so I suggested that we fly over what I thought should have more than enough iron to give the sensor operator a good signal—a bridge!

"That ought to work, sir," the crewman agreed.

As we approached from the north, we could see red lights on the tops of the towers on the east side of the bridge. I recalled from FAM flights in the FRS that we flew over the east portion at 500 feet or higher. No problem, we were more than a mile west of those helo catchers.

"Stream the MAD, and remember to time the cycle," I called (so professional).

As we got closer to this low portion of the bridge, my copilot said in a Patton-like voice (not!),"I... don't... like... this."

OK, we'd fly on the north side of the bridge and have a look. Closer, closer... Towers, large towers, though apparently not high enough to warrant red lights, spanned the length of the bridge!

"Retrieve the MAD," I called, "we're going home."

The next day, on a daytime instrument hop, I flew to the same outlying civilian field. On the way home I decided to have a look at the towers up close and personal. Sure enough, the towers, with wires, were 250 feet high.

Let's calculate: 400 feet flying altitude minus 90 feet for streamed MAD doesn't leave a lot of room to spare. We probably would have cleared everything, but like my CO says, "If there is ever a doubt, there is no doubt."

The point is, my copilot did what I briefed him to do, we reacted properly, and no one had to write a report about things being ripped off aircraft, or worse.

If each of us responded to individual circumstances this way, we could expect a simultaneous feeling of uneasiness in an aircraft when confronted by a developing emergency. However, because we are unique creatures, this mass internal warning rarely occurs. We operate in aviation as individual pieces in the puzzle that is our community's mission. To use each crew member to his fullest potential requires that he not only be onboard both physically and mentally, but that he be willing to fully participate in the mission, hence the importance of crew coordination.

It is simplistic to assume that because we have delegated a responsibility, that the person on whom it falls will always be willing or able to fulfill the task. Something might inhibit a person from speaking up at the exact point where he could have averted the emergency.

Two common reasons for mishaps have been identified as "lack of assertiveness," which is often the result of "excessive professional courtesy." Essentially, this is the failure of an individual or crew to speak up in deference to the HAC's or mission commander's rank, position, experience level, or reputation (warranted or not). There are, no doubt, some less political reasons a crew member would hesitate to speak.

Aircraft or mission commanders, whether in a conventionally manned crew or a 2P/2P flight, must eliminate barriers that may prevent any crew member from willingly, and if need be, aggressively speaking up when an unsafe situation develops.

Try to instill the feeling that we are all in the aircraft to safely complete the mission. No concern is too trivial to voice. We can prevent mishaps; you have all heard it before. Brief the flight, fly the brief. ◀

LCdr. Scherberger was the OIC of HSL-34 DET 3.

JOC Rich Beth

We're Not Out to Violate the Prime Directive

By ACCS (AW) Cheryl Wagner

All air traffic controllers have stories about pilots who decide on their own to disregard tower or radar instructions. Most of the time, their deviations result in a quick reshuffling of the pattern to accommodate a pilot's "individuality," but there are times when it's much more serious.

One day at a master jet base, aircraft are in the pattern. A small civil airport about 2.5 miles south of the base is also busy. The local controller asks two Air Force F-16 pilots inbound for the overhead if they are familiar with the course rules. They say they are. (ACs will routinely ask transient pilots if they know the course rules. If not, we tell them what the rules are). Just to be sure, the controller reminds them to remain within two miles of the runway on downwind, then clears them for the break. The pilots acknowledge.

The two F-16 pilots did more than wander farther than two miles from the runway on downwind. They surprised and terrified the civil airport's pattern when they flew through it. The local controller had a job resequencing his pattern to fit the Falcons back in from the south 40.

Although there were no mishaps, we did get a rather irate call from our civilian counterparts. When we asked the pilots why they violated the restriction, they said something that sounded like, "That's how we always fly the downwind pattern." Maybe they assumed, like some pilots do, that they only needed to follow the parts of the clearance they understood, rather than clarifying the parts they didn't.

• Here's another incident at the same master jet base. It is a day with enough haze to restrict visual approaches, a lineup on GCA final, and tower launching departures between radar arrivals. One aircraft on a GCA approach rolls out, tower positions-and-holds a departure on the same runway, there's a T-33 on 4-mile final, and jets at 3-mile intervals behind him. The aircraft on GCA clears the runway, Tower clears the departure for takeoff, and the T-33 reaches three miles on final (where GCA requests landing clearance from Tower). The T-33's clearance is withheld for 8-10 seconds while the tower controller ensures the departure begins takeoff roll (another rule we live by).

In that time, the T-33 pilot advises GCA that there is an aircraft on the runway and that he will make a 360 for spacing. He makes a right turn and heads straight for the jet in sequence behind him. The GCA controller intervenes immediately and prevents a midair. The T-33 pilot must have assumed he was alone in the sky and that we obviously couldn't see that aircraft on the runway. Or maybe he thought we couldn't plan well enough to make sure the departure was out of the way well before he needed to wave off.

Believe it or not, there is a reason why or when the air traffic controller says something, you must take it seriously. There is no reason why we would play "chicken" with your aircraft or put unnecessary restrictions on you. We know what and who is behind, in front of, above, below, within one mile and within 100 miles of you. Our job... prime directive, if you will—is the safe, orderly, and expeditious flow of air traffic. The emphasis is on "safe." We have plans A through Z for whatever could happen in the pattern, and we're trained intensively to respond to anything in seconds, because we know your life depends on it.

My stories involved "other service" pilots. I've found naval and Marine aviators cooperative for the most part, although sometimes a bit testy when holding short behind 10 other aircraft and finding out Center has placed a hold on departures going where they want to go. ◀

ACCS(AW) Wagner is assigned to the Naval Command, Control and Ocean Surveillance Center in San Diego.

I Wish the Intruder Had Dual Dual Controls!

By Lt. Anthony Onorati

Peter Mersky

Even though I was an experienced instructor in the Skyhawk and the Intruder, I had a flight that caused me to reevaluate my attitude and instructional technique. In the A-6 FRS, instructor pilots (IPs) must frequently teach from the the BN's seat (such as during early familiarization sorties) while the new fleet-replacement pilot gets the hang of flying a new jet. For most IPs, this can be rather uncomfortable because there is no stick for that "just in case" situation when you have to intervene. As a result, most instructors are a little more sensitive to any deviation from normal flight.

As an old Skyhawk instructor, I had developed a technique that let my students press the limits of safety. Since I had a stick and could take control at any moment, I felt comfortable letting them make mistakes that I probably would not have otherwise tolerated. On this particular flight, I was also lulled into a false sense of security by my student's excellent brief and solid flying for the first portion of the hop.

The flight was a night, instrument round-robin, ending with multiple approaches at homefield. Although it was his first night flight in the Intruder, my student was doing well and had already shot a successful TACAN approach followed by a "rails" PAR. It was on the missed approach from this PAR that the fun began.

We were cleared to 3,000 feet on runway heading, but because there were FCLPs in progress, we had to remain at 1,000 feet or less until the departure end of the runway. My student raised the gear and was accelerating at 600 feet as he raised the flaps and slats. I didn't realize that he was looking back to watch the flaps and slats, had developed vertigo, and had inadvertently pushed his stick forward.

Soon after the flaps began to move, I felt an odd sensation like we were accelerating toward the water. My first impression was that *I* had vertigo. I looked up and saw the moon's reflection on the water filling the windscreen.

"Pull up!" I yelled, and reached for the stick with my left hand and grasped my lower ejection handle with my right hand. I don't know why I didn't eject, but we managed to get the aircraft's nose above the horizon and climb. I did not have the presence of mind to look at our bottom-out altitude, but I did notice the VSI indicated more than 3,000 fpm down, and that the radar altimeter, which was set at 320 feet, had been going off for what seemed like a long time. From visual cues, I'm sure we were under 100 feet by the time we recovered. We held for about 15 minutes to calm down before we brought the aircraft back to mother earth, both of us badly shaken but happy to be in one piece.

This could have been a fatal delay if we had been below 100 feet.

I am telling this story not to embarrass my student, but because I learned a few things from this incident that I think would benefit others. First, I didn't trust my initial instinct that something was amiss. It took me two or three seconds to evaluate the situation before I came to the same conclusion my body had already told me. This could have been a fatal delay if we had been below 100 feet. If it ever happens again, I will act first and evaluate second.

Next, I was not paying as much attention to what my student was doing as I should have been. I was confident in his abilities to handle the aircraft because of his performance up to that point; I let my guard down. The fact that it was his first night hop in well over a year didn't really register until after we landed.

Lastly, and perhaps most important, I reaffirmed and proved to myself that we are in an unforgiving business. One minute everything is going well, and the next, you're dead. ◀

Lt. Onorati was an instructor with VA-128. He is currently assigned to the Naval Postgraduate School.

By the Letter

By Maj. Peyton DeHart, USMCR

The hydraulic systems of the AH-1 Cobra are very reliable. So reliable, in fact, that the two times they have failed on me have been very memorable occasions.

On my first fleet squadron cross-country flight, I had my head buried deep in my map when a hydraulic line parted. High-pressure fluid sprayed on one of the flat walls of the fuselage, and the sound convinced me that the transmission was ripping in half.

My head shot up and I looked out the canopy, not to fix our position, but to get one last look at the earth before I died. The sound level dropped off as the last of the fluid sprayed out. We were still flying and we were fairly close to Wilmington, N.C., so we turned toward it for an emergency landing. We needed a runway because NATOPS calls for a slide-on landing at 60 knots. That made for a spectacular light show as we slid our helicopter's steel skids onto the asphalt at dusk. Sparks flew as we scratched on for 300 feet.

Stepping out of the aircraft, I shook hands with the HAC for his picture-perfect landing. We had followed the NATOPS emergency procedures to the letter. Everyone congratulated us.

The next time a hydraulic system gave up the ghost, I had my head down again, this time looking at a beach in Grenada through the optical sight. It was the second day of the military intervention there, and I was looking for targets. No wailing sound this time, just a loss of pressure. We pulled off the gun run and were directed to return to a secure area. Secure areas were pretty much limited to spots 1 through 7 on USS *Guam*.

That being the case, we made a slow approach to spot 4, hovered and landed. Everyone congratulated us.

The same system failed each time, and there is only one emergency procedure listed for that failure. We were hailed for our correct responses both times. We followed NATOPS guidelines both times, yet made entirely different landings. How is it, then, that we were able to follow NATOPS-recommended procedures both times while flying essentially opposite landing profiles?

The preface page of the NATOPS contains the answer. It says, "This manual contains information... required for safe and effective operations. However, it is not a substitute for sound judgment. Compound emergencies, available facilities, adverse weather or terrain... may require modification of the procedures contained herein."

This paragraph gave us the latitude to respond differently, and correctly, to both emergencies. ◀

Maj. DeHart flies AH-1 Cobras with HMA-773. He has been the *Approach* Contributor of the Year for 1992 and 1993.

Runaway pr

By Lt. Sid Wegert

It was *not* a dark and stormy night in the Arabian Gulf, just a typical hazy evening. My crew and I were looking forward to a plain old ESM hop on a regular 1+45 cycle. It would be a nice change of pace from our usual four-hour-plus Southern Watch ATO-tasked missions, and even nicer not to have to joust with the KC-135s.

Our thorough brief even included what FM-music radio frequency was to go in the scanner (AFRTS 107.1 won out, for you Prowler guys who are headed this way). On the flight deck, I noted just how dark it was. With a slant range viz on the short side of four miles, there was no horizon to speak of. For good luck, I had given the weight chit to my right seater to drop off in flight-deck control. I had received OK passes the last three times he had done it for me, so why break the string—I was on a roll. As we were tossed into black nothingness. I called, "155 knots, gear coming up."

ECMO 1 replied, "Good engines, good climb."

Everything seemed fine at first. There were more than enough knots to make all those Bernoullis work, even at night, but the jet seemed to have a mind of its own. It acted as if it wanted to climb to the moon, but there was no moon. Something was not quite right.

I stole a quick peek down at the pitch-trim gauge; it showed nine units, nose up. For a brief second I wondered how the gauge had gone from six-and-a-half to nine, but it was nothing that a few clicks of nose-down trim couldn't correct. I was more interested in lowering the nose and accelerating to flaps speed. The more I thumbed the trim button down, the more the stick came back in my lap and the less we accelerated. We had been airborne only a few seconds, but climbing out in an attitude that was holding us at 160 KIAS was going to cause us to pass 2,500 feet faster than Rush Limbaugh's TV show was sweeping the country.

Another peek down revealed the needle of the pitch-trim gauge moving past 10 units. The needle quickly went past the last mark of 12, completely off the scale, and then stopped. Stab Aug had not yet been engaged, and there had been no time to reach around with a flashlight and pull the appropriate circuit breaker to keep the trim from running completely away.

I knew that the Prowler can fly with full-trim nose up or nose down, so I wasn't all that worried at first. However, I had never seen the pitch-trim gauge go past 12 units, and it took both hands to push the stick forward enough to trade a little of our climb rate for enough airspeed to get the flaps up.

The airspeed finally rose, and I got the flaps retracted. There was no problem putting distance between us and the water. I pulled the throttles back to level off at 12,000 feet, hoping that the reduction in power would help ease the stick forces. No such luck. I topped out at 13,000 feet before I could get the stick and aircraft to do what I wanted. Still using both hands, I found it much harder to hold level flight than a climb.

Any reduction in forward pressure on the stick resulted in a rapid nose pitchup, and if not corrected fast enough, the aircraft went right into buffet. Yes, the plane

owler

was flyable, but how would it handle after a gross-weight adjustment with gear and flaps down?

While we waited for rep to come up on the frequency, we ran through the NATOPS procedures. All of the steps were for stopping a runaway trim condition, not for correcting it. We went ahead and pulled the appropriate circuit breakers, then reset them, with no effect. Next, I tried engaging the autopilot with altitude hold, again with no effect.

We conferred with our rep, explaining the situation and what we had done so far. He said there would be enough time during the current recovery for us to dump down and check out the flight characteristics in the landing configuration. Dumps came on and we waited.

My arms were getting a nice workout manhandling the aircraft. Basic air work was starting to go out the window. We secured the fuel dumps right at max trap, giving us enough gas to slow flight the jet, make a pass, and get to a divert field in any configuration if things didn't turn out for the best. We descended to 7,500 feet. We lowered the gear and flaps next with an on-speed check. Although the plane was lighter and slower, it still took both hands to hold on-speed. Even with that big, heavy, not-so-attractive nose of the Prowler working for me, and the power way back, it was very difficult to establish and maintain a descent. Getting down and holding any kind of rate of descent was more a function of nose movement than of power setting.

A great deal of cockpit discussion ensued to weigh options. Use of APC was rejected for a few reasons, and many "what ifs" were brought up about bringing our bird aboard, at night, with this particular problem. We elected to divert. We cleaned up and headed to an unfamiliar field. None of the frequencies that are published in the DoD pubs for the area worked. Somewhere, somehow we pulled out a freq that got us talking to a controller who passed us to the proper center. Having an aircraft with VHF was handier than having a $2.00-off coupon for Domino's. After taking a few extra minutes to explain our intentions, we got vectors and clearance for a visual straight-in.

The plane was lighter than it was back at the ship, but it still didn't want to come down. I lined up with the runway at eight miles, and I tried to fly a shallow descent, using both hands to push forward on the stick. Once I picked up the VASI, I decided to drag it in on the low side, and ended up flying through the glideslope over the numbers. But that was OK. I felt more comfortable and more in control doing it that way. Looking back, I think it would have proved more difficult trying to maintain a 3.5-degree glideslope, especially where simultaneous throttle and stick movements were concerned. Besides, this was a long runway, even by Air Force standards.

On touchdown, the jet magically flared itself and I had to physically hold the nose down until the flaperons (spoilers) popped up and all the Bernoullis ran underneath the wing. I let go of the stick and it came all the way back in my lap.

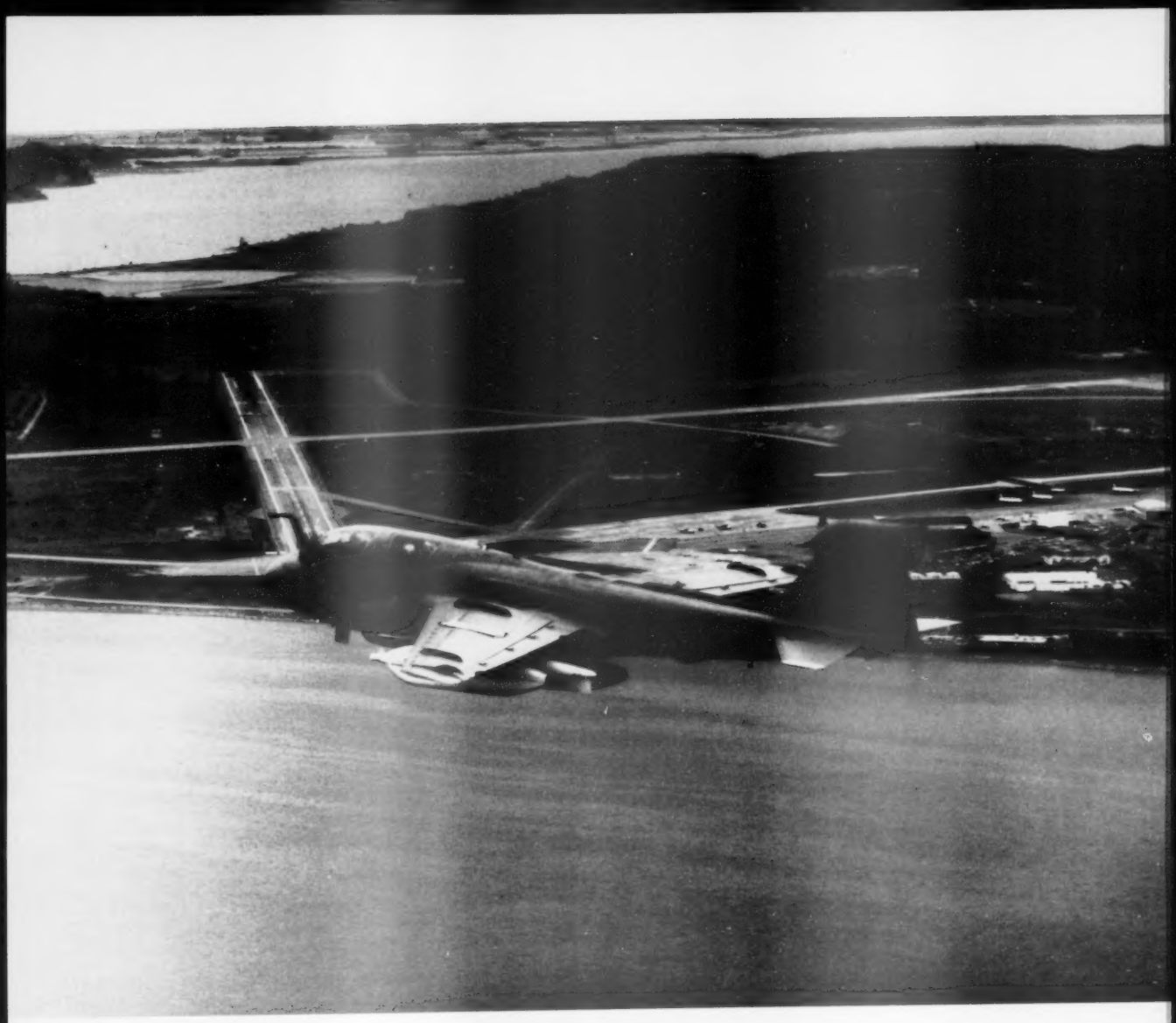
We parked, shut down, and much to our relief were met by a friendly American face. After a safe-on-deck message back to the ship and a few "morale and welfare" calls to CONUS, we were taken to the local version of the BOQ. My crew and I sat around drinking bottled water and discussing the events of the evening.

I noticed my right seater pull something out of his pocket. It was the weight chit I had given him earlier. Well, so much for having good luck on our side. Being only a little superstitious, I would have claimed that was the reason we were here and not back at the ship, but that was not the case. As it turned out, the pitch-trim actuator had run all the way to its mechanical stop and lodged itself there because of faulty wiring inside the control stick.

I had been taught way back in the training command to always ensure your last input to the pitch trim before takeoff or launch was nose up. I can't say for certain if this kept my situation from being a case of runaway nose-down trim, but off the cat at night, I'm glad it didn't turn out that way.

Yes, the EA-6B can fly with full nose-up trim, but it does get very tiring, kind of like listening to a 2330 post-strike debrief at Fallon. Yet, there is nothing in NATOPS that addresses *landing* this way. If this had been blue-water ops, this story most certainly would have been different. ◀

Lt. Wegert was with VAQ-131 at the time of this incident. He is currently assigned to VAQ-130.



No Heading, No Problem

By Lt. Robert Wells

It was a sunny morning at NAS Whidbey Island, and we had a standard daylight radar hop. After the brief, we walked, started, and took off without any problems. Right after takeoff, we headed toward a local op area to allow the backseaters time to work the ESM/ECM system. After about 30 minutes, we got our clearance and flew east.

Earlier in the flight, we had noticed that our heading references had begun to precess; slaving the compass-gyro group accomplished little. No problem. A VMC radar hop in familiar country could easily be accomplished with the wet compass and timed turns. At the time, this seemed appropriate since the turns would be relatively smooth and no one was too busy to do the mental gymnastics required to figure the timing.

About halfway through the route, we opted to head home and get a couple of ACLS approaches before landing at our deck time.

The trip home was fine until we switched to Approach and began an en-route descent to multiple approaches. We quickly saw that the weather had worsened considerably since we left, and Approach was extremely busy sequencing local aircraft into the field. We went IMC as we descended through 5,000 feet MSL, then leveled off at 3,000 feet, still in the goo. I had become distracted and was busy completing checklists, stowing gear, talking on the radios and searching for any sign of VMC. We were told to descend to 1,200 feet with a right turn inbound, followed by dirty-up when wings level. I glanced at the altimeter passing 2,000 feet, and finished off the last items on the approach-to-landing checks.

I asked the pilot if he was sure he wanted to do ACLS touch-and-goes in IMC and with only the wet compass. He said he didn't mind, and I said, "OK." I glanced at the instruments one more time, expecting to see the assigned 1,200 feet, only to see 800 feet and descending.

K. Hagenup

"Altitude!" I yelled. I felt the reassuring push in my seat as the pilot pulled the aircraft smartly back to 1,200 feet.

The pilot had fixated on his HSI card, trying to calculate the time he needed to hold the turn to roll out on course to the assigned heading. He was so occupied doing calculations that, for a few critical moments, he had dropped the altimeter from his scan. I had also stopped looking at the altimeter while I looked out the window for the field. I immediately requested a no-gyro PAR to a full stop, and we were safely on deck a few minutes later.

After the debrief, we all went home a little wiser, and I had a few goodies for my bag of tricks.

✓ I should have been prepared to use the gyro-stabilized heading mode of the compass group when we encountered IMC. Slaving the thing every now and then would have taken far less time than doing mental timed turns.

✓ I should have completed all checklists ASAP and gotten weather in anticipation of a busy approach and IMC.

✓ I should never have been concentrating on checklists or on looking outside while we descended IMC at low altitude.

✓ I could have asked the backseaters to read the checks or watch the altimeter to ensure they would be doing so.

✓ I should have asked for a no-gyro approach to a full stop from the very beginning.

✓ The minute-to-live rule works. Here is a case of the little things, each compounding the other to a point that was unacceptable. The one thing that prevented a disaster was good training. As busy as we were, an internal clock told us that it was time to break focus and look about the cockpit... a little late, but not too late. ◀

Lt. Wells flew with VAQ-134. He is currently assigned to VAQ-129.

"The X"

By Capt. Madison Crum, USMC

Peter Mersky

Was it worth the price that I could have paid?

What a great deal: an out-and-in to P-cola with a form flight. There was an aircraft that had broken down there, and after working a Form-1 in the Pinehill MOA, we would drop down to the birthplace of naval aviation. I would let my backseater off to ferry the plane back to Meridian. The rest of us would grab a quick lunch and then head back for a Form-2.

The first part went great. Section go into Pinehill, flawless lead, good student, vectors to the break. Quick debrief, lunch and back to ops for the flight plan home. But our decision-making process became flawed.

The weather guessers told us that Pensacola was surrounded by thunderstorms. There was one passage north though, which if we hurried, we could get through it. That was the direction we wanted to go anyway, so we filed and trotted out to the planes. No fuel yet. A quick game of acey-deucy and a call to update our weather and we were en route, with lots of gas.

Section go with radar vectors to the north. Clouds ahead but they aren't that dark.

"Tighten it up, two, we're going in the clouds," I called.

"Dash 2's lost sight."

Dash 2 turned 30 degrees right for one minute, then turned to parallel my course and got a separate squawk and altitude.

Meanwhile, things were becoming dark and ominous on my heading and altitude, so I deftly made a 180-degree left turn. At this point, all I had experienced was light rain and moderate turbulence. Departure said the weather did not look too bad to the west, so I headed that way. I finally arrived in clear air and requested a vector to the north.

"724, we're showing some bad weather north."

"Well, then vector me back east, then north."

"724, a line of severe weather is forming where you just came from."

"OK, then which direction would you suggest, Departure?"

"724, we're showing severe weather all around you at this point."

"Roger that, Departure, I saw a canyon between the clouds to the north. I think I can pick my way through to the north."

"Roger 724, you're cleared to the north and to deviate as necessary for weather."

Northward I went in my TA-4J. I was actually able to stay clear of clouds for a little while, but eventually I went back in the goo. It looked dark to the east so I veered west. Bad. The clouds darkened, my altimeter spun rapidly up then rapidly down, and for the next week (or five minutes, I'm really not sure) I was bounced, beaten, rained on, and hailed on. My whole world centered around that trusty ol' AJB-3.

"Keep them wings level and don't worry about anything else," I kept telling myself.

Then I was done, the air was smooth, I was alive, and the airplane was flying. The cockpit had a few charts scattered about, but all appeared to be in order.

I looked over my trusty steed and saw some paint missing from my right slat, but I couldn't remember if it had been like that on preflight. My engine was running fine and the canopy was not scratched, cracked or bent. Dash 2 was already in the area and said the weather was fine. Press. On to a beautifully-executed Form-2, back home for the section GCA and turn to downwind.

As I pulled into my parking spot, I noticed a few plane captains staring at my plane. I shut down and climbed out. My plane captain asked if I had encountered bad weather.

"Why do you ask?"

"Come see for yourself," he replied.

I saw that not only was there paint missing from my right slat, but there were some dimples in it as well. My right position lights were broken, my probe light was gone, and the nose cone was stripped of paint. The rain-removal ports below the front windscreen were stripped of paint. If bits of fiberglass, metal, or glass had gone down my intake, very bad things could have happened.

Did I get that second X? Yes. Was it worth the price that I could have paid? According to the XO and the skipper, no!

I learned several things that day. First, if the weather's bad (particularly with embedded thunderstorms), don't take off (the weather dissipated later in the afternoon, anyway). If you fly through a thunderstorm and get out the other side, land, and as only an XO can teach, there is no reason in the training command to take risks for an X. ◄

Capt. Crum is an A-4 flight instructor with VT-7.

BRAVO ZULU

Lt. Kevin C. Jones
Lt. Pete W. Quintal
Lt. Michael L. Jensen
LCdr. Ed J. Ward
LCdr. Michael P. Enright
VAW-125

Lt. Pat R. Cleary
CVW-17 LSO

Tigertail 603 was returning from a mission supporting Operation Deny Flight in the Adriatic. As the crew prepared for a night recovery onboard USS *Saratoga*, Lt. Jones (CAPC) realized he had no response in elevator trim, which remained two-units nose down, forcing the control column forward to an abnormal position. Lt. Jones tried standby trim with no effect.

With the help of Lt. Quintal (co-pilot), Lt. Jones ran through the NATOPS procedures, but could not restore normal or standby trim control.

Descending to 3,000 feet, Lt. Jones slowed the E-2C, lowered the gear and flaps, and checked controllability. Despite manual pitch assistance by Lt. Quintal, more force was needed to keep the Hawkeye at the proper landing attitude.

Lt. Cleary helped with repeated AOA calls as the aircraft flew on final.

After an initial pass with full flaps, which proved unworkable, the crew trapped, using two-thirds flaps.◀

Lt. Timothy D. Slough
Capt. Daniel G. Purcell, USMC
VT-3

Returning from an FCF to NAS Whiting Field, Lt. Slough (PIC) and Capt. Purcell saw an unsafe-gear indication while in the break. The nose and right main landing gear showed unsafe, with the left main gear showing down-and-locked. Lt. Slough took control while Capt. Purcell went through the NATOPS procedures for manually cranking the gear down.

Established in the emergency orbit pattern, Capt. Purcell couldn't move the gear handle. Faced with landing with the nosegear and right main gear partially down, the crew decided to raise the gear for a gear-up landing. The gear retracted, indicating up-and-locked.

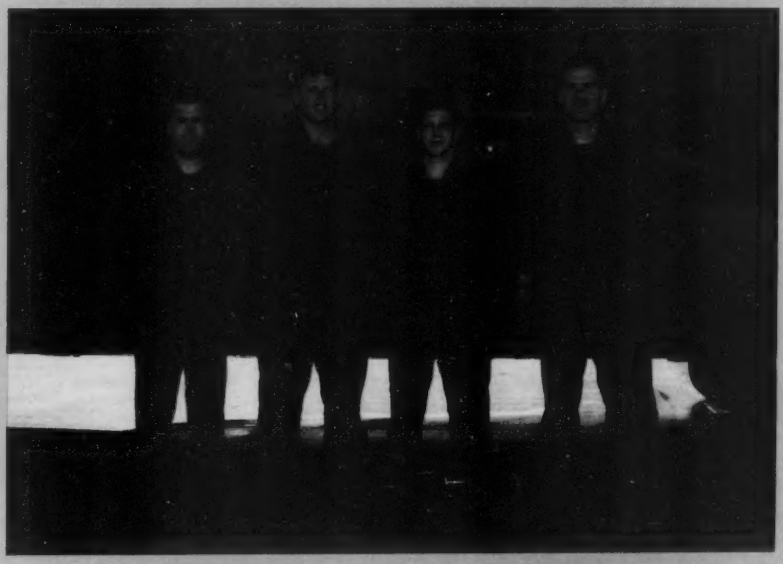
Capt. Purcell again tried to lower the gear manually while Lt. Slough coordinated the emergency with the field and discussed options with squadron maintenance.

Left to right: Lt. Slough, Capt. Purcell

Capt. Purcell got both mains down-and-locked, but now the nose gear showed unsafe. Following unsuccessful attempts to swing the gear into the locked position, the crew prepared to land with an unsafe nose gear.

After two practice approaches, the crew flew a wide straight-in approach to final. Over the threshold, Lt. Slough secured the engine from the rear seat, while Capt. Purcell flew the approach. The combination of a smooth touchdown and aerodynamic braking allowed time for the propeller to stop before Capt. Purcell lowered the nose to the runway, minimizing damage to the T-34C. The trainer returned to service within a few days.◀

BZs require an endorsement from the nominating squadron's CO *and* the appropriate CAG, wing commander, or MAG commander. In the case of helo dets, the CO of the ship will suffice. A 5-by-7-inch photo of the crew by a squadron aircraft should also accompany the BZ nomination. Please include a squadron telephone number so that we can call with questions.



Left to right: Capt. Garrison, LCpl. Adams, LCpl. Conley, 1stLt. Kube

Capt. E.M. Garrison, USMC
1stLt. R.R. Kube, USMC
LCpl. A.L. Conley, USMC
LCpl. D.W. Adams, USMC
HMH-361

Tiger 53 launched on an FCF with 1stLt. Kube as the HAC. He had just completed the FCF pilot syllabus and was on his initial check flight. The aircrew was making a three-point engine plot on the No. 2 engine. The speed-control levers for No. 1 and No. 3 engines were back to make it easier to get an accurate plot. The CH-53E had been flying for 45 minutes. Weather in the areas that were usually used for check flight was marginal. Thus, the crew decided to do the plots over a large nearby lake where the weather was better.

While at the top end of the three-point plot, the helicopter suddenly yawed to the right, and the crew heard a loud klunk.

Capt. Garrison (copilot) immediately brought the speed-control levers up for the No.1 and No. 3 engines. Thinking he had a problem with the tail rotor, 1stLt. Kube began immediate-action procedures and lowered the collective and followed the yaw. The crew prepared for an immediate landing. First Lieutenant Kube checked controllability and found that the aircraft could be yawed left or right.

The HAC spotted a suitable landing site near the lake and away from populated areas, and turned toward it. Capt. Garrison completed the landing checklist,

The two pilots maneuvered the aircraft to the site while continuing their decent. LCpl. Adams (crew chief) and LCpl. Conley (first mech) provided landing clearance and prepared the cabin for landing.

First Lieutenant Kube made a precision, no-hover landing to a tidal overflow adjacent to the lake. During landing, Capt. Garrison looked back inside the aircraft and saw that the oil-temperature gauge for the main gearbox (MGB) was pegged, and the MGB chip light was on. LCpl. Adams isolated the chip to the MGB sump. He tried to pull the detector, but couldn't because of the high temperature in the detector area. After shutdown and a cooling down period, he pulled the detector. The crew found numerous metal pieces along with a one-inch spring.

If the crew had continued the flight for much longer, the MGB might have seized, resulting in the loss of the aircraft and the crew.◀

After determining that they had tail-rotor control, this crew could have easily decided to remain airborne to troubleshoot the problem, which could have been disastrous. By sticking with their initial decision to land, and using good crew coordination, this incident became a maintenance action instead of a mishap.—LCdr. John Burgess, H-53 analyst, Naval Safety Center.

My Brush with Death

By Cdr. Christopher Corrigan

As a freshly commissioned ensign, I was stashed in a squadron awaiting flight training. During my first month, we deployed onboard a carrier for ORE. My very first day aboard, I witnessed a fatal aircraft mishap. That experience gave me a profound respect for the dangers in my chosen profession. This attitude, I believe, has helped me stay mishap free over my 15-year flying career. However, when a friend asked me recently if I have ever had any close calls, I had a chance to reflect on my one brush with death.

PHAN Charles R. Solseth

I was a nugget in a VA squadron, halfway through my first cruise. The flight schedule assigned me to an air-wing strike. The flight lead for our division of A-7s was a senior ship's company officer with more than 3,000 hours in model. I would be Dash 2. Several things about this hop would raise my level of concern now, but they did not back then.

First, I was flying with an unknown flight lead in a complex event. Next, this was an around-the-world cruise, and since we were newly arrived in the Med, this strike would be against a target unfamiliar to everyone in the air wing.

The brief was long. There were several questions on tactics and administrative items. By the time the strike brief broke up for individual element briefs, it was nearly time to man up. The division lead covered as much as he could in the remaining time. Our attack tactics would be a high-altitude division roll-in. As we would find out later, this meant something different to each member of the division.

The constructive target was an island military complex. The real-world target was a point in the water, five miles from the island, marked by smoke. During the attack phase, it was clear that each element was having difficulty acquiring the target.

The smoke was hard to see from high altitude. My division lead spotted the target late, forcing him into a steep dive angle. I rolled in with him. I was very uncomfortable because I couldn't see the target (smoke), I was worried about hitting my lead, and I was wondering whether we would run into another airplane.

Finally, my lead's bombs came off and he pulled off target sharply. I quickly changed from flying formation to looking for the target. Just as I saw it, my radar altimeter warning went off. My steeper-than-planned dive angle made my minimum pull altitude dangerously low. The slight delay in pulling up caused by being surprised by the warning tone had put me in real danger. Fortunately, reflex took over, and I started a maximum-G pullout, missing the water by a few hundred feet.

During the debrief, I mentioned my confusion about the bombing tactics. I said that I got closer to the water than I would have liked. The lead said I should have dropped when he dropped. The other section gave us several thousand feet of separation and did their own roll-in. The second section's wingman didn't drop at the target, and jettisoned his bombs on the way back to the ship. Since we were three pay grades junior to the division lead, we did not dwell on our feeling that the attack phase was flawed. The rest of the debrief was perfunctory. However, I did learn a couple of important lessons.

First, don't trust anyone. Question a brief if something doesn't sound right or if an important detail is omitted. Clarify if you get a bingo from the ship by looking up the bingo profile in the PCL to make sure you can really make it; check local weather on ATIS as far out as possible, even though the forecast is for good weather.

Next, brief the attack phase in detail. It's especially true in strike briefs that we spend a lot of time on the wing tactics and scenario, and by the time we get to the details of the attack in the discreet element briefs, we're often short of time. Spending plenty of time on ingress, egress, and roll-in details can save your life. ◀

Cdr. Corrigan is a Selected Air Reservist with VA-304.

My Stress Meter Was Pegged!

Death

Illness

Divorce

Depression

Financial hardship

Is there *anyone* who has not experienced these stresses? Even the supermen we know as naval aviators are not immune.

Anonymous

Most of us are aware that life's crises can affect performance. The question is, at what point do they affect our ability to fly airplanes safely? That was the quandary I found myself in not too long ago. I had been out of the Navy for some time, but I was still slipping the surly bonds with a commercial airline.

To say that it had not been a good year would be like saying Saddam Hussein has been an irritant. My wife of some years had left in search of fulfillment, taking with her most of the furniture and a large portion of my "B" scale paycheck. This occurred at a particularly inopportune time, since my son had just started college. My father had suffered a series of debilitating medical problems during the past year. Eventually, my mother and I had to admit him to a nursing home, where he subsequently passed away. The airline I worked for was having financial difficulties, laying off pilots and asking for pay concessions. And finally, as the airline cut back and down-sized, I could no longer hold a line of time in my home base. I had to start commuting to a base in another city.

I can't identify any one day, week or even month when the stresses in my life crossed that imaginary line from normal to too much. I do know that I found myself increasingly preoccupied with matters outside the cockpit, and my concentration on flying the airplane suffered as a result. I started making uncharacteristic mistakes. During several weeks, I made the following errors:

- I loaded the wrong route into the navigation computer.
- I misconfigured the pressurization system.
- I let the airspeed fall below reference speed on a low-visibility nonprecision approach.
- I missed numerous radio calls.
- I made several landings that LSOs probably would have graded as OK 3s, but which brought no raves from the passengers.

Fortunately, none of these errors led to trouble. I imagine that the other crew members I flew with figured that I was Air Force trained and let it go at that. But I was deeply disturbed by these uncharacteristic mistakes. As I

struggled to understand why one of naval aviation's finest was screwing up after all these years, some articles I had read in *Approach* years ago came to mind. They were written by Dr. Robert A. Alkov, and were titled "Life Changes and Accident Behavior" (Feb. 1975), and "Psychological Profile" (July 1975).

The gist of the articles was that certain events create stresses that increase a pilot's likelihood of having an accident. In particular, one sentence from the first article leaped out at me: "The majority of accident behavior can be explained by personal stresses, which cause a person to perform in such a manner as to increase his or her accident liability."

The articles included a list of life events with an assigned numerical value (life-change units) indicating the relative severity of that event.

For example, death of a spouse led the list with a value of 100, while minor violations of the law brought up the bottom with an 11 count. The second article, which reviewed several mishaps, referenced research at the Navy's Medical Neuropsychiatric Research Unit. This material revealed "people with 300 life-change units have almost an 80 percent chance of becoming physically ill or injured within a year."

PH2 Gregory S. McCreash

Armed with this disquieting information, I set about to compute my life-change score. My grand total was 378!

Once I became aware that I was at risk, what should I have done? I couldn't just stop flying. After all, the airlines' policy is no flyee, no payee. There were some things I could do, however.

Simply being aware that outside forces were affecting me helped me focus more closely on tasks at hand. I also made it a point to let the other pilot I was flying with know that I might not be my usual razor-sharp self. It wasn't necessary (and would not be in keeping with the traditions of naval aviation) to come right out and say something like, "Hey, I'm a basket case. Watch my every move like a hawk."

Instead, I got the message across by finding a common ground of stress to open the subject. Marital problems usually opened the door since that's something most pilots can relate to. I started to try to reduce those levels of stress where I could. I took an assignment on an aircraft that was less desirable but that was based in my home city. I bought a decent bed to help me sleep better. I made an effort to eat right and minimize fast food.

Ultimately, time was the real healer. As the weeks passed, the sting of my failed marriage dulled, as did the pain of my father's death. My financial situation improved with graduation to "A" scale and an upturn in the fortunes of my airline. And, as my life started returning to normal, so did my flying.

So how does this apply to those of you still in the Navy?

Obviously, Navy flying is different from civilian aviation. Many Navy jets are single-seat, for example, taking away the backup of an additional crew member. Nevertheless, the same principles apply if you find yourself in a stressful situation. Admit that you are more accident prone than normal. If applicable, let other crew members know you might not be up to full speed. Don't be afraid to confide in the CO, XO, Ops O, or a flight surgeon.

From the other direction, squadron leaders need to stay tapped into what is going on in their pilots' lives so they can head off problems before they start.

An old saw says that the only sure things in life are death and taxes. In this age, we can add stress to that list. Just going on a routine cruise creates many life change units all by itself.

Admittedly, determining how stress affects performance is not a precise science. But we need to be aware there is a correlation, and we need to be wary when we cross that imaginary line that increases our risk factors. Keeping that ball centered on a night approach is tough enough without distractions.

Pitchlocked Prop

over the Atlantic

By Lt. Randy Casement

I was on my first trans-Atlantic flight as a patrol plane commander, although I had been a PPC for almost six months. We had to deliver an aircraft to a deployed squadron in Sigonella, Sicily.

I arrived early at the hangar on a cold Monday morning to tie up all of the loose ends associated with the flight. Occasionally, when crossing the Pond, a gas-'n-go is scheduled at Rota, but we had not made prior arrangements. No big deal. The P-3 holds enough fuel to fly nonstop to Italy.

A quick look at the weather was enough to make any aviator cringe. A front had just passed, leaving a solid wall of goo off the coast with icing and turbulence forecast for the first 800 miles of the trip. Not the kind of weather we would have liked with an aircraft loaded and fueled to maximum gross weight.

After a thorough preflight, it looked like we would make our takeoff time. The forecasters were right on the money with the weather. With the decrease in power from operating the anti-icing system, we needed to make our fuel last another nine hours. Weather avoidance is not an

exact science in the P-3C, since it is equipped with a surface-search radar, not a weather radar. Nonetheless, our radar operator did what he could to keep us clear of the heavy icing areas.

It wasn't until almost three hours later that we broke out of the front. By now, it had begun to get dark. A spectacular moonrise on the horizon told us we could relax. OPARS confirmed our fuel calculations, which indicated we were a bit ahead of schedule. Boredom began to set in. After a few seat swaps and several cups of black java, I found myself in the right seat handling the HF radios with Oceanic.

Not too soon after we crossed the mid-way point, the annunciator panel for the prop pump No.1 light for the No.3 engine lit up. A visual check of the propeller showed no signs of an external fluid leak. Had we been over land, this would not have aroused great excitement in the cockpit. This light often shows because of low-fluid servicing. The propeller has two pumps equally capable of supplying the necessary hydraulic-governing pressure to control the pitch. Nonetheless, we quickly completed the NATOPS emergency procedures, which called for increasing power and true airspeed, then continuing normal flight. We were already comfortable at FL270. With one propeller pump on line, we decided that a straight shot to Sigonella wasn't out of the question. After all, losing a prop pump in flight is rare. The odds of losing another pump on the same engine were slim. We were still more than five hours away from our destination.

No sooner had the copilot, flight engineer and myself finished briefing NATOPS contingencies than the light for prop pump 2 for the same engine illuminated! So much for playing the odds. Something was definitely wrong with the propeller system. Although nobody was running for their parachutes yet, the flight station was feeling a bit uneasy at this point. There was nothing we could do but wait and see what would happen next. It was anybody's guess, but shutting the engine down was definitely not an option.

Any P-3 pilot will tell you that no two propeller emergencies are the same. With no rep to consult over the radios, we were on our own. There was no way we could make it to Sig on three engines with a heavy aircraft, so we had the navigator calculate times and distances to possible divert airfields. There were not many.

After a long two minutes, the flight engineer an-

nounced an overspeed of 105 percent. It was now time to take affirmative action. By adjusting power, we noticed that rpm was not holding constant and determined the propeller to be pitchlocked. Delving deeper into NATOPS, we completed the required emergency procedures for a pitchlocked propeller. This requires tricking the system to maintain the present blade angle. When we pulled power back to 100 percent rpm on No. 3, the prop pump 2 light went out! This made no sense at all; it totally contradicted our systems knowledge. More importantly, we lost more than 40 percent of that engine's available power. Our FE noticed that the No.3 engine's oil gauge had risen approximately two gallons. He suspected an internal fluid leak between the prop assembly and engine-oil system.

When the dust finally settled, we decided to make an emergency divert to Rota. The sooner we landed, the better. We didn't want to find out the kind of fun we could have with an uncontrollable propeller over the water. Had we originally planned for a gas-'n-go at Rota, our fuel range to the coast would have been questionable. The full bag may have been a blessing.

We called everyone we could think of with the HF radio. Oceanic immediately cleared us direct to Rota when we declared our emergency. Rota was still more than two hours away. Our navigator called Rota air ops to coordinate any necessary diplomatic clearances. Rota Metro reported rain showers over the field, but luckily not IFR.

It was now time to think about the flight profile we would fly to secure the engine before making the approach. There were several possible descent profiles, and each could yield a different propeller behavior. I was thankful for the simulator training I had done as an instructor. Less than two months earlier, I had practiced this same emergency with two students. At the time, it seemed a bit tedious. The scenario takes almost 45 minutes to complete, and no pilot in my squadron could remember a P-3 pitchlocking a propeller during the last six years. I decided to go with my training experience and continue until on top Rota at FL270.

Any P-3 pilot will tell you that no two propeller emergencies are the same. With no rep to consult over the radios, we were on our own.

With plenty of time and fuel remaining, my copilot and I swapped seats, reviewed NATOPS procedures and delegated cockpit duties, including using the off-duty FE as a data recorder. With several thousand hours in the P-3, one of our passengers, who happened to be our wing's senior pilot, gladly agreed to remain in the flight station to offer advice. He admitted he had never seen this particular malfunction before.

Shortly after midnight, we marked on top Rota, and Oceanic control passed us off to Rota Approach. Approach began giving us vectors for a GCA. When we told them that we were still at FL270, they responded with maneuvering vectors. We then completed all checklists and briefs before requesting descent vectors.

As we descended, the denser air caused the No.3 engine's rpm to decay. We added power on No.3 to maintain 100 percent rpm until we became TIT limited. Descending through FL200, the engine reached the minimum allowable operating rpm, and we immediately fuel-chopped the engine. The result was a no-NTS (negative torque sensing), windmilling propeller, which wasn't the best case scenario, but much better than a decoupled propeller with a gauge-limited overspeed.

The propeller seemed to be somewhat stable and did not cause much of a controllability problem, aside from an oscillating yaw. We landed safely. With 10,000 feet of runway remaining after touchdown, we held reverse thrust on the operating engines to a minimum to prevent a possible swerve on a wet runway.

Postflight maintenance revealed that a manufacturing defect in the prop-shaft plug had allowed more than three gallons of prop fluid to slowly leak into the lower-pressure engine oil system. The leak was slow enough to put us 1,300 miles over the ocean before running out of fluid.

Luckily, we had practiced this same emergency in the simulator, and I sure was glad I had taken the training seriously. More importantly, my crew and I performed as we trained. ◀

Lt. Casement flies with VP-10.

BROWNSHOES IN ACTION COMIX

"The kind real aviators like"

By LCdr. Ward Carroll

"Well, I don't really think of it as a mishap as much as giving my own *personal* touch to the rightsizing effort..."

Vultures' Row

This list includes Flight, Flight-Related and Ground Class A Mishaps during FY-94.
Classifications and descriptions are subject to change.

DATE	AIRCRAFT	COMMAND	DAY; NIGHT	FATAL	FLIGHT REGIME; LOCATION
7 Oct	UH-1N	HMM-163	N	1	Takeoff; at sea
14 Oct	UH-1N	HMM-268	N	0	Towing, aircraft fell overboard (AGM); at sea
15 Oct	AV-8B	VMA-231	D	0	Birdstrike during low-level; Raleigh, NC
29 Oct	F/A-18D	VFA-106	D	0	Aborted takeoff; Whiting Field, FL
18 Nov	F-14A	VF-84	D	0	Training flight; Currituck Sound, NC
17 Dec	F/A-18A (2)	VMFA-115	D	1	Air-to-air intercept; off Okinawa
10 Jan	HH-46D	HC-6	N	3	Amphibious SAR support; at sea
12 Feb	F-14B, F/A-18C	VF-103, VFA-81	D	0	Midair (not same flight); Adriatic Sea
17 Feb	T-2C (2)	VT-23	D	0	Midair during formation training flight; Kingsville, TX
18 Feb	HH-46D	HC-6	N	0	Controlled ditching; at sea
22 Feb	F-14D	VF-11	D	0	Crashed; at sea
8 Mar	EA-6B	VMAQ-3	D	0	During FCLPs, possible bird ingestion; Cherry Point, NC
12 Mar	CH-53D	HMH-363	D	1	Hit trees/ground after takeoff; Bridgeport, CA
5 Apr	A-6E	VA-304	D	2	Hit water following break for FCLP pattern; Alameda, CA
28 Apr	F/A-18C	VFA-83	D	1	Crashed at sea following catapult launch; Adriatic Sea

WORDS TO LIVE BY!

UNITED STATES NAVAL SAFETY CENTER

Idea contributed by LCdr. Harry Klien, ASO